CONTROLLING INVASIVE PLANTS
PROGRESS REPORT 2002

Timpanogos Cave National Monument

Problem Statement

Invasive plants are the greatest threat to the health of our ecosystems. Invasive plants are introduced plants that rapidly spread and choke out native vegetation. The food chain is altered and the whole ecosystem can be affected. Timely action is needed to save the ecology from these infestations.

At least 22 species of exotic invasive plants have been identified occurring on approximately 15 acres (6%) of the monument's 250 acres. The species of greatest concern are: Toadflax, Spotted Knapweed, Morning Glory, Cheatgrass, Orchard Grass, Yellow Sweetclover, Alfalfa, Mullien, Hound's Tongue, Hoary Cress, Bouncingbet, Shepherd's Purse, and Yellow Alyssum, Blue Mustard, and Crested Wheatgrass. The monument is of a manageable size that with funding support and timely action, the spread of invasive plants can be controlled.

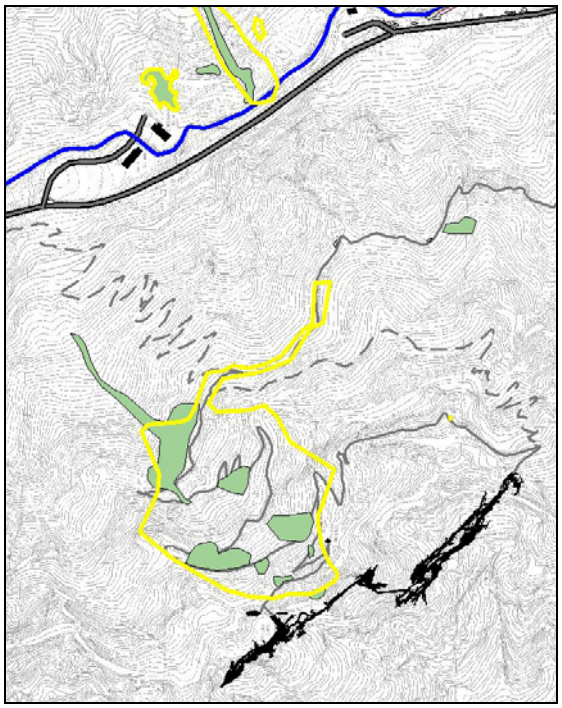
Progress Report

With the funding provided through the CESU in FY2002, the monument is developing a program to combat the spread of invasive plants. In 2002, the program established monitoring protocols, pulled 5 acres of invasive plants, and started revegetation efforts. Additional SEPAS funding was acquired to write a Vegetation Management Plan for FY 2003.

Monitoring

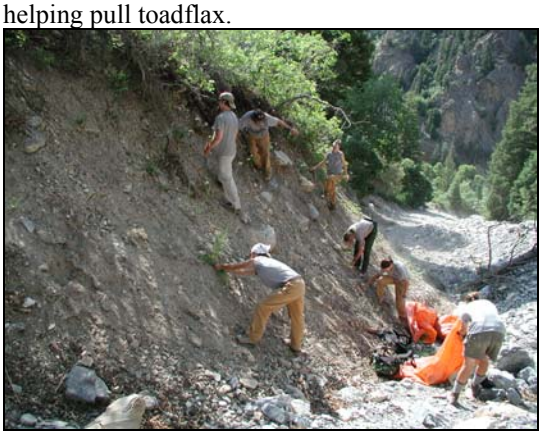
Monitoring protocols were established to evaluate the successes. The invasive plants were monitored through mapping, photographs, and sample plots. Year to year mapping shows the rate of spread or control. The photographs include change in population density. And plots show the changes in ratios of invasive plants to native plants.

Yearly mapping has shown great progress. Even though new populations are still found, many of the hand-pulled populations especially Dalmatian Toadflax are showing obvious decline. In 2002, 12 invasive plant species were mapped at the same time as being pulled.



Left. Map showing the change in the distribution of Toadflax. The yellow outlined areas are the populations mapped in 2001 and the green shaded areas are populations mapped in 2002.

Bottom: Utah Conservation Corps (UCC) group helping pull toadflax.



Photomonitoring is also showing great progress. Counting Toadflax seen in 6 photographs taken in 2001 and comparing those numbers to Toadflax pulled in 2002, the density has been reduced by 77%. Currently, the Timpanogos Cave trail is not dominated by the yellow blooms of Toadflax. The results are visual apparent.

2001 – 87 Adult Toadflax

2002 – 15 Toadflax Saplings

In 2002, grids were placed to monitor the ratios of exotic plants to native plants. These grids allowed monitoring in locations where multiple invasive species were present. These 100 ft^2 grids permanently were placed by driving in 3 foot rebar stakes into the ground. Then string was placed to form 9 subgrids. These subgrids were photographed and the plants within them were identified and counted. These grids will allow us to evaluate our treatment and restoration efforts.

Treatment

At present, the mechanical treatment is being used. In the summer of 2002 and 2002, all populations of Toadflax, Spotted Knapweed, Mullein, Hounds Tongue, and Bull Thistle were pulled. In 2002, populations of Hoary Cress, Yellow Sweetcover, Alfalfa, Bouncingbet, and Blue Mustard also were pulled. Additional species and methods of treatment are being considered for 2003.

Revegetation

Methods for revegetation are being researched and implemented. In 2002, 50 shrubs were planted, and one acre of disturbed lands was seeded with a native grass mix. Native seeds were collected and are being propagated to be planted in the spring of 2003. With continued efforts we hope to have native plants reestablished within the disturbed areas throughout the monument.

Looking to the Future

In 2003, a Vegetation Management Plan will be written to define the needed actions to control the spread of invasive plants. This document will describe and rank the plants according to need for action. The plan will then define techniques for identifying, controlling, and continual monitoring invasive plants. With this concentrated effort and support, the siege of invasive plant will be controlled.

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